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-	12	resume and job and employer and hire and fee	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/08/29 15:48
-	9	resume adj creat$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/08/29 15:52
-	99	job adj search	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/08/29 15:54
-	27	candidate and application and employer and qualification and profile	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/08/29 16:08
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-	98	matchmaking	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/01 12:11
-	22	matchmak$3.ti.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/01 12:14

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S2        19      RD (unique items)
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S3         50      EMPLOYMENT AND INTERNET AND KEYWORD AND SEARCH AND SCOR? A-
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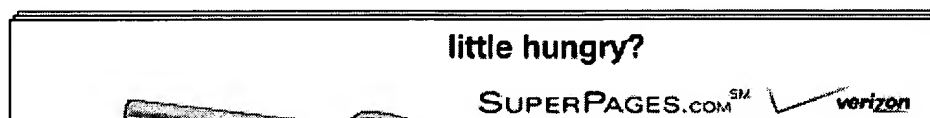From Workforce , June 01 2002 by Samuel Greengard
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Business Wire
June 29, 2000

recruitsoft.com Increases Strategic Functionality of Web-Based Hiring Management System.

Business & Technology Editors

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recruitsoft.com's latest software release enhances

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recruitsoft.com (www.recruitsoft.com), the leading Application Service Provider (ASP) for end-to-end, Web-based hiring management systems, today goes live with a new version of its Recruiter WebTop (TM). The Recruiter WebTop(TM) application powers the career Web pages of large corporations and also provides a complete business application over the Internet that supports every aspect of the corporate recruiting process including requisition management, sourcing management, global collaboration management, recruiting workflow management, candidate relationship management and Web access to a range of recruitment enhancement services.

"Our new release makes significant strides in functionality, enabling corporate recruiters to conduct all of their recruitment practices on the Web, from mining for resumes to advertising positions-anywhere in the world, in print or online-with one click, to tracking media performance as well as time-to-hire, with increased security for all job postings," said Louis Tetu, recruitsoft.com CEO. "Our R&D staff of 90 is dedicated to best practice, leading-edge technology and service for the recruiting industry. This release is just more proof of their commitment and talent."

Some of the new release features are made possible by recruitsoft.com's exclusive alliance with Bernard Hodes Group, the nation's largest communications agency that specializes exclusively in human resource communications.

New key features include the following:

Optimized Internal Recruiting

The new Internal Recruiting feature creates a specialized career section for the internal use of both employee-candidates and recruiters on the company's Intranet site, helping recruiters to mine the employment resources within their companies.

Enhanced Candidate History Tracking

The Candidate History Tracking component helps corporate recruiters gather the greatest amount of information possible, including all historical information about each candidate during the preselection and hiring processes. Recruiters may also add comments in the Candidate Search component as well as useful information about existing employee referrals and internal relationships. The new release also provides system messages regarding the status of each candidate in the hiring process.

Complete Media Tracking

recruitsoft.com's Media Tracking feature performs several important functions that help recruiters measure the performance of various media and methods for reaching potential candidates. First, it informs recruiters about how candidates learn about job openings and monitors the performance of each source. Also, using media tracking statistics, including job board efficiency, the system helps recruiters determine the optimal sourcing strategy for each job requisition. Media Tracking also allows recruiters to select among a customized list of traditional media along with other sourcing options, such as the corporate web site and job boards.

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Catch the wave as HR goes online
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ABSTRACT: A growing wave of HR managers are going online to recruit
personnel, conduct research using electronic data bases, send e-mail, and
engage in valuable networking and discussions. Taking the plunge into the
online world can be difficult, confusing, and time-consuming, but more and
more people are realizing that cyberspace offers real solutions to real
problems. Using a program designed for today's graphical interfaces, it is
possible to position a cursor on text, click the mouse, and travel from one
topic, forum, or site to another. Interactive and flexible, it allows an
end user to gather data - or provide it - quickly and effortlessly.
Recruiting is perhaps the hottest area of all. For example, Cisco Systems
receives as many as 700 resumes electronically every month. Recruiting
online requires instituting new procedures, but it saves time, reduces
paperwork, and lowers administrative costs. Other popular uses for the
Internet and commercial online services are professional forums, bulletin
board systems, and discussion groups. The level and quality of information
continues to improve.

TEXT: It's just another day on the Internet. Inside the offices of Hydro
Quebec, a large Canadian utility, Michel Mantha is surfing his way around
the world, and he's now looking for the next great wave. Sitting in front
of his computer, the HR research adviser is browsing the Internet's World
Wide Web and using its sophisticated hypertext links and graphics to boldly
go where HR has never gone before. With the click of a mouse button, he's
insider the U.S. government's server in Washington, D.C., examining a
schedule of upcoming HR conferences. Then, instantly, he's off to Cornell
University in New York, looking at the latest reports issued by the Glass
Ceiling Commission. A few minutes later, he's made a lightning-fast
pilgrimage to The Quality Wave, an index of sites containing information on
TQM, educational programs and business theories.

Every time Mantha sees something that piques his interest, he simply clicks
on a highlighted word or graphic image--including high-resolution
photographs--to obtain more information. The text pours onto his computer's
screen, at which point it can be printed or saved for future reference. And
if it so happens that he's jumping to another Web site, the system
transports him there at warp speed--efficiently and invisibly, regardless
of whether the computer is located in Boston or Bombay. Of course, the
World Wide Web is just one portion of the Internet. He also uses the
Internet for E-mail and to subscribe to newsgroups that keep him informed
on the latest industry buzz (see "What's All This Talk about Gophers? The
Lowdown on Online Lingo," page 66, for definitions of italicized terms).
"It's a remarkable way to do research," he states. "It's a revolutionary
step forward."

Cyberspace. It's certainly not the final frontier, but it's fast becoming
an important part of the corporate arsenal--and psyche. This international
network of computers is opening new doors and new opportunities for human
resources professionals who have the equipment and the mindset to venture
into the online arena. Today, a growing wave of HR managers are going
online to recruit personnel, conduct research using electronic data bases,
send E-mail, and engage in valuable networking and discussions. Using the

Internet--which connects upwards of 28 million people and 3.2 million host computers in 70 countries--as well as commercial services such as CompuServe, Prodigy and America Online, these pioneers are venturing into a revolutionary new world where data and information flow at the speed of light.

"It's changing the way people work and think," says Stephen Gibson, publisher of Online Sources For Human Resources, an interactive online guide and associated monthly newsletter that offer HR cybernauts tips and information on how to better use the Internet. Adds Michael Rowe, marketing director for E-Span, an online job-placement service that represents dozens of major corporations: "The online world represents a tremendous opportunity for HR. It's one of the most powerful tools one can have at his or her disposal. Every day, more and more people realize just how powerful this medium is. They're getting beyond the novelty and hype and discovering that it offers solutions to real problems."

But all the gain doesn't come without a good deal of pain. Taking the plunge into the online world can be difficult, confusing and time consuming. Not only must one decide what type of service or provider to use, it's also necessary to learn how online systems work and how one can use them to achieve results. That often translates into learning how to use new software and understanding the finer points of online etiquette. It also means reengineering the way processes work within HR, or even adopting an entirely different way of thinking. And, as with any new medium, things don't always work as billed. Many online products and services aren't as useful as their promoters might like you to think.

Yet, those who have embraced the online world to recruit, research and trade information insist it's a giant step forward. As Tim Johnston, manager of university relations for Advanced Micro Devices (AMD) explains: "The entire world is at your fingertips."

The Internet and online services offer HR a wealth of opportunities. Venturing online isn't a particularly complex task in itself. At the most basic level, a computer, a modem and the right kind of software can open the door to the vast world of cyberspace. Those on a network at a major company often can wade into the Internet via a direct connection. Using a program designed for today's graphical interfaces, such as Windows or the Macintosh, it's possible to position a cursor on text, icon or graphical image, click the mouse, and travel from one topic, forum or site to another. Interactive and flexible, it allows an end user to gather data--or provide it--quickly and effortlessly. And, depending on the nature of the service, it's possible to connect with others who share similar interests. You might call it the realization of Marshall McLuhan's Global Village.

And that's fundamentally changing the workplace of the 1990s. Although many of those who subscribe to online services use them for reading news, tracking stocks, exchanging gossip, playing games and pursuing interests and hobbies, the online world increasingly is oriented toward business. Just browse the Internet's World Wide Web, an environment that offers dazzling graphics to complement an almost endless stream of text, and it's clear that a growing number of companies are viewing the medium as a way to promote themselves and their products. The list includes organizations as diverse as AT&T, Honeywell, IBM, Eastman Kodak, Microsoft, Ford Motor, Pizza Hut and Ernst & Young.

But the Web isn't strictly a marketing tool for Big Business. In the HR arena, sites such as Career Mosaic, Job Web and the Monster Board offer employer profiles, job openings, career information and human resources forums. In addition, there are long lists of consultants and services peddling their wares and offering their expertise on everything from training to career development. There also are government sites, including OSHA, where an HR practitioner can stay informed on current regulations, directives and even scan OSHA notices in the Federal Register. It's possible to jump from one subject or service to another in a matter of seconds--by simply clicking a mouse button. Meanwhile, other portions of

the Internet--such as FTP, Usenet and Telnet--offer a mind-boggling array
of additional resources. You can access mailing lists for your specific
interests, along with newsletters, academic studies and an array of
background materials.
The breadth of the material truly is astounding, especially if you consider
that the Internet is only one piece of the online puzzle. Commercial
services such as CompuServe, Prodigy and America Online also feature career
centers, companies promoting goods and services, and forums for discussing
a wide range of HR-related topics. They're easy to access and relatively
inexpensive. And those who wade online agree that these services are
becoming more powerful all the time. Today's generation of Windows and
Macintosh software provides an easy way to navigate online quickly and
seamlessly. DOS and UNIX users also can take advantage of proprietary
software designed to enhance and simplify the process.

Cyberspace is a new recruitment source, Not surprisingly, many within the
HR field are beginning to take notice of the vast online universe. And
recruiting is perhaps the hottest area of all. Step inside the Menlo Park,
California, headquarters of Cisco Systems, a fast-growing, internetworking
firm, and you're likely to see the HR department of the future. Almost all
open positions are posted on the Internet--on the firm's own World Wide Web
homepage and on various career services. Net browsers can view as many as
400 ads at any given time.

And, apparently, a lot of people like the idea of looking for work online.
The company receives as many as 700 resumes electronically every
month--approximately 30% of the total it receives overall. Some months the
figure has reached 50%. All resumes automatically are routed into a Resumix
system, where they can be recalled at a moment's notice--whether at the Bay
Area headquarters or across the country at the firm's Boston or Raleigh
sites.

"Company recruiters no longer have to spend their time scouring resumes to
find the appropriate candidate; they simply can fill the position," says
Barbara Beck, vice president of human resources. "Going online has provided
us with a tremendous boost in productivity. It's facilitating
communication, and it's making it easier for everyone to use HR services.
It allows us to add maximum value. We're working very hard to stay ahead of
the technology curve and have an extremely sophisticated human resources
organization."

Indeed, Cisco's Web site, besides displaying the job listings, contains
information about the company's products, its financial data, its culture
and history. "And that saves a lot of time for HR, which no longer has to
field as many inquiries," Beck says.

Another HR person who finds online recruiting particularly appealing is
Elaine Hart, manager of recruitment for Staples, the nation's third largest
discount office-products superstore chain. In March, the Framington,
Massachusetts-based company joined the Monster Board, a career center and
job-placement service on the Internet's World Wide Web. Hart typically
posts listings within Staples' homepage; when job seekers browse through,
they're able to click on an icon to go to the company, and then search job
openings by region, category and other parameters. They're also able to get
information on the company itself.

"It's a way to demonstrate that the company is on the leading edge of
technology, and it's a way to make the entire recruiting process more
efficient," says Hart. Indeed, when an applicant responds to a posting, the
E-mail message is routed directly to Hart's computer. A process that can
take weeks using traditional methods--newspapers, trade ads and paper-based
resumes--now can take only hours. That allows Staples to find qualified
applicants far more quickly. In addition, electronic postings create
greater flexibility. Hart can modify or remove an ad if it isn't working or
if a position is filled.

Recruiting online saves time, reduces the amount of paper Hart must handle and lowers administrative costs. But, more importantly, venturing online allows the company to reach an expanded audience. Already, she's receiving as many as a half dozen electronic resumes and applications a day. And virtually all of those who respond to the online ads tend to be highly educated, well trained and perfectly comfortable with computers and online services--a set of skills that's becoming crucial in the 1990s. Of course, many technical specialists--particularly in computer hardware, software and networking--gravitate to online forums, making the medium a particularly fertile area for mining prospects.

This is true for college recruiting as well. Just ask Johnston. Recruiting from college campuses always has been grueling for him. Every time the manager of university relations sets up a job-fair booth, it takes hours to organize the display and get all the brochures and paperwork in order. Then there's the arduous task of conducting one interview after another--a dozen or more in a single day isn't unusual. There's travel time, hotel stays and a steady crush of paperwork to follow up on. By the time he gets back to his office in Sunnyvale, California, he's typically buried in work. "It isn't especially cost effective or time effective to hit the road," says Johnston, "but it has been a necessity."

Johnston is hoping to change all that. Just more than a year ago, AMD began designing an alternative to the traditional recruiting model. Although the firm continues to seek young talent by participating in more than 30 job fairs each year, it also has ventured into the far reaches of cyberspace. The $1.6 billion corporation, which produces computer microprocessors and other high-tech devices, has begun recruiting online.

Using the Internet's World Wide Web, AMD lists information about the company, the culture, its officers, its compensation and benefits, and other areas of interest to job seekers. If an individual is interested in one of the positions listed, he or she can apply directly from his or her computer. And when AMD needs a specific position filled, it broadcasts the news to college job-placement offices and key professors all across the country via electronic mail.

"We have a network in place that allows us to automate recruiting and reach the right people," Johnston says. "It's redefining the entire process. Electronic media never will replace human interaction, but it's clearly going to play a key role in the way AMD and other companies handle HR-related tasks. It's effective, it's efficient, and it saves time and money. Online capabilities allow a greater level of sophistication, and that is increasingly important as everyone battles for a competitive edge."

That's a concept that's well understood at Lotus Development, the Cambridge, Massachusetts-based software giant. It posts ads for approximately 20 positions a year online, but the number is increasing rapidly. "We advertise through all avenues," says Christine Leonardo, director of strategy and programs in the human resources department. "We use Internet job postings and traditional newspaper and magazine ads, as well as recruiting at conferences. It's important to have a balanced approach. But the dramatic increase in the number of people online, especially on the Internet, is making electronic recruiting more attractive all the time. The Internet is an outstanding tool."

One of the big advantages to advertising positions online, Leonardo points out, is that it eliminates many of the space constraints of advertising in a newspaper. Most companies that sell online space don't severely limit the length of the text. And if a company sets up its own site on the World Wide Web, or rents space on the Monster Board or a similar service, it can provide as much information as necessary about the company, culture, benefits and any open positions. "You put an ad in a major newspaper and wind up spending a fortune without saying much of anything," she says.

Recruiting online requires instituting new procedures. When Lotus decided it would go online, it turned to an employment service called E-Span--a four-year-old Indianapolis company that has become a leader in the emerging world of online employment services. Leonardo must simply write the ad and send it to E-Span along with instructions on how to categorize it, and the firm posts it in its job libraries for as long as four weeks. E-Span also provides expertise on how to use the online world more effectively. Because it has a presence on CompuServe, America Online, GEnie and the World Wide Web, more than 10,000 job seekers access E-Span's Interactive Employment Network every day. Leonardo sees it as a winning proposition. "Many of these are highly qualified people you wouldn't otherwise connect with," she says.

It's an approach that appeals to growing numbers of recruiting specialists. Rowe says that the number of ads the agency posts now runs between 500 and 600 a week, and has increased tenfold during the last 18 months. "It's a tremendous opportunity to capitalize on technology and use it to HR's advantage," Rowe says. "Paper-based systems aren't going to go away any time soon. There's still going to be a demand for newspaper and trade ads. But this certainly fits into the changing corporate paradigm."

A paradigm that Lotus' Leonardo knows well. Approximately 30 electronic resumes land in her computer every week--and the number continues to grow. After reviewing a resume at her PC, she passes it on to an assistant, who imports it--along with those received by fax and through the mail (the latter are scanned in)--into a resume-tracking program. Then, her department can use key word searches to find qualified applicants in a matter of seconds. It's efficient enough that Leonardo hopes to increase the number of resumes that enter the system electronically in the months and years ahead. That could eliminate extra administrative personnel, including temporary help during peak periods.

"Online recruiting has many advantages," states James C. Gonyea, author of the Online Job Search Companion and president of Gonyea and Associates, an online career service headquartered in New Port Richey, Florida. "You literally can create a job listing and post it within minutes. You have access to millions of people, and it's generally less expensive than conventional methods, which require a greater support structure. Online systems require less clerical staff and less paperwork." He believes, too, that image enters into the equation. "If you're looking for people with a high level of skill--particularly in technical fields--recruiting online shows that you're on the leading edge."

Indeed, those who conduct online recruiting say that although the typical ad doesn't elicit the same level of response as an advertisement in a newspaper because far fewer people surf online channels than read newspapers, in most cases, the response is more focused--and the level of candidates often is higher. "You often find people who are very adept and knowledgeable," says AMD's Johnston. (Before you dive headfirst into the Internet, however, you may want to give it some more thought. See Gray Matters, page 100.)

But recruiting online is a somewhat different ball game than posting ads in a newspaper or a trade publication. Gonyea points out that it's necessary when writing an ad to go online to make sure that the wording and terminology elicit the desired response. Because resumes must be entered into a searchable data base, key words are crucial. "If you're interested in hiring an administrative assistant, but the position might also be referred to as a secretary, you want to make sure that both words are contained in the ad," he says. "Otherwise, a highly qualified person searching for the word secretary online might miss the ad when they conduct a search." And the same goes for anyone searching the data base within the company. "Without strong indexing, you aren't going to pull a list of all the qualified candidates," he warns.

Gonyea also suggests that firms posting ads online should have the capability to receive resumes and inquiries via E-mail. "The last thing people want to do if they're at their computers and they see a listing they're interested in, is print their resume and mail it or fax it. When E-mail capability is missing, it's an indication that the employer isn't really confident or fully conversant in the technology. It can be perceived as a problem. If a company opts to recruit online, it should put all the pieces in place to do it right."

Recruiting online is easy--but it can cost you. The cost of establishing an online presence for recruiting purposes can vary greatly. The least expensive option is simply listing an open job in a professional online forum or an Internet newsgroup. That costs nothing, and thousands of such listings are visible on any day of the week. Turning to an outside agency such as Gonyea and Associates or E-Span, which can ensure that millions of users are exposed to the ads, can cost from $75 an ad to $3,000 or $4,000 a year for unlimited advertising. A few firms charge as much as $10,000 a year. A company that chooses to establish a homepage on the Web's Career Mosaic or Monster Board will likely fork over anywhere from $1,000 to $10,000. And organizations intent on setting up their own Web site can spend considerably more. Although a Sun Microsystems or Hewlett-Packard workstation sitting on a desktop can become a server on the Web--thus supplying text and graphics to others on the Internet--it's far more challenging to develop an eye-catching interface and link data effectively. As a result, the expertise of an outside consultant or agency often is required.

Still, accessing online services is simple. Venture into E-Span's CompuServe site, and you're greeted with a main menu that lists various tools: an introduction to the service; What's Happening at E-Span; Resume Rules; Successful Interviewing; Networking; Tips for Searching E-Span; and direct access to E-Span's Job Search data base. By clicking with your mouse on the topic of interest, you're led through various menus--accessing information along the way. Once you've entered the actual job data base, it's possible to browse ads by subject--marketing, computer programming, education and media are just a few of the categories included--as well as by region. A typical ad offers a page of information about the open position, as well as the company or organization. In most cases, an E-mail address complements telephone and fax numbers, and addresses.

Navigating the World Wide Web isn't any more difficult. With software such as Netscape or Mosaic and powerful online indexes such as Yahoo, it's possible to find HR-related sites and then click through menus and hypertext links to find desired listings. In addition, many companies--including AMD, Amdahl, Intuit, McCaw Cellular, General Electric and Schlumberger--offer their own listings within larger sites that provide information on products, services, investor relations and an array of corporate matters. In most cases, it's possible to contact the HR department directly from the Web site.
What's allowing HR professionals at these firms to move so seamlessly into online publishing? Gibson credits the emergence of HTML (Hypertext Markup Language), a typesetting language that has become the standard for documents on the Internet. Just by executing a simple command, it's possible to convert a Microsoft Word or Novell WordPerfect document into an ASCII format that harnesses the Web's hypertext and graphics capabilities. No sophisticated programming needed, no lengthy conversions with expensive software.

"The landscape is changing," says Gonyea. "The old world order of storing resumes in filing cabinets is disappearing. Electronic methods of collecting, storing and recalling resumes and employment data are playing an increasingly significant role. Many companies are beginning to realize that they must complement conventional approaches with an online presence. Otherwise, they're likely to miss an important segment of the job market.

And, as time passes, it's going to become a standard way for all companies to do business."

HR professionals are going online to network and gather information. Hunting job candidates in cyberspace is only one part of the overall picture. As HR professionals become more knowledgeable--and comfortable--with the technology, they're venturing into other online areas. Some of the most popular uses for the Internet and commercial online services are professional forums, bulletin board systems (BBSs) and discussion groups. In most cases, HR professionals freely share information on topics as diverse as training and development, HRMS, payroll and benefits, and legal requirements. By posting a question in the appropriate location, it's possible to have responses in a matter of hours rather than days or weeks. Often, illuminating discussions develop.

"It's a powerful medium for networking and trading information," says Gibson. "In many respects, it's like having a workshop or conference available any time of the day or night. Instead of making 10 or 15 telephone calls to colleagues to discuss an issue, or searching through reference materials to get the latest information on a hot topic, it's possible to have it at your fingertips with almost no effort at all. It's like opening a window to a world you never knew existed."

Mantha knows just how powerful the medium can be. The HR research adviser spends an hour or more logged onto the Internet daily. Responsible for researching a variety of HR subjects, including TQM and business process reengineering, he checks more than half a dozen different bulletin boards, where he exchanges news and information with colleagues from all over the world. In addition, he subscribes to more than half a dozen electronic mailing lists, including Cornell University's highly respected HR Net, and reads other newsgroups by accessing a part of the Internet known as Telnet. The newsgroups include discussions and information on topics as diverse as best practices and performance management.

"It's enabling me to do things I wouldn't otherwise be capable of doing," remarks Mantha. "It's providing a tool that allows me to do my job more effectively and more quickly than others who aren't online." A few months ago, for example, when Hydro Quebec needed to develop an employee satisfaction survey, Mantha found himself wading deep into the Internet. Seeking other corporations with at least 20,000 employees that had conducted comprehensive census surveys, he posted a query on an Internet newsgroup. Within 24 hours, 30 HR professionals responded, including top managers at Federal Express and United Parcel Service. Says he: "I didn't need to research the issue any further. All the information I needed was there. Without the Internet, I would have been forced to make dozens of phone calls and check back issues of magazines and newsletters."

And that wasn't a one-time event. During the last year, Mantha has connected with senior human resources executives at Motorola, IBM and other major corporations. "I have developed my own online network," he says. Yet discussions with colleagues are just part of the Internet's allure. When Hydro Quebec wanted information on diversity and women's issues, Mantha logged onto a Cornell University Web site that offers academic papers, government reports and research on the issues. He downloaded two dozen reports--many between 50 and 100 pages--printed them out and handed them to his boss. They were used by several colleagues and served as background material for a presentation at a conference. "There's no question that I could have gotten the same material by writing and requesting it. But it would have probably taken weeks instead of minutes," he says.

At Cisco Systems, Beck and human resources managers routinely check other companies' Web sites, organizations, associations and government pages so they can do benchmarking and other research. "It's a powerful tool you can use without ever leaving your office," Beck explains. Her staff also uses E-mail with attached files to send and receive documents and information

with dozens of other high-tech companies. "If a compensation analyst needs to get information from another firm, they often do it using E-mail and the Internet. It's quick and it's easy."

Though Beck and Mantha are particularly adept at using online services, they're certainly not alone. Approximately 10% of Hydro Quebec's HR department currently has Internet access--and the number is growing rapidly. At Cisco, virtually everyone has access from their desktop. Outside these companies, online use is also on the rise. Subscriptions to Cornell's HRNet have increased from approximately 600 to 1,400 in 18 months. And on Prodigy, where the Society for Human Resource Management (SHRM) launched a professional HR forum last December, more than 6,000 individuals have accessed the service.

Although increasing, these numbers are still low. "There's an opinion that the HR profession has been a bit slow to catch up to the computer revolution," says Mike Frost, manager of the SHRM Forum. "Unfortunately, most in the profession simply aren't using the computer to the extent of its capabilities. An online forum, among other things, encourages people to think about their computer as more than just a word processor or a data base. It's a way to tap into lots of useful information and resources right from your desktop. It's a way to exchange information, at a time when the flow of information is crucial. With the Internet, you don't need a plane ticket or a hotel reservation to participate in a conference."

The same goes for many independent BBS sites, where HR professionals can log on to electronic bulletin boards with a modem and access reams of data. "The HR profession relies on networking, information chasing and people knowing other people," says Robert Keach, president of HRCOMM, a Pleasant Hill, California, service with more than 350 active members. "The online medium is a natural marriage between the technology and he HR profession. It's a way to shrink the world and greatly expand connections--rather than finding yourself limited only to the cards you can fit in your Rolodex."

HRCOMM offers an array of features for HR professionals--all at no cost. It's possible to search the National Directory of Compensation Benefit Surveys; advertise a job opening; search for a new job; conduct, participate and view custom-designed online surveys; track down consultants, contractors and other experts; download files and software; and engage in discussions on virtually any HR-related topic. Companies promoting their services online fund the BBS. "People only now are beginning to get a sense for what the technology can do for them," explains Keach.

Access reams of information via cyberspace. As the Internet, commercial services and independent BBS sites expand, the level and quality of information also is improving. As Mantha illustrates, it's now possible to conduct serious research using the World Wide Web and other parts of the Internet, such as FTP (File Transfer Protocol), which allows public access to remote computers. Venture into the U.S. Department of Labor's Occupational Safety and Health Administration's Web site and you'll get a good idea of what's available. OSHA posts the text of the Occupational Safety and Health Act of 1970 (including Amendment 1990), OSHA notices contained in the Federal Register, the Field Inspection Reference Manual, corporatewide settlement agreements, and an assortment of directives, documents, regulations and interpretations. The Web site is updated twice a week.

For an online user, navigating OSHA online is as simple as clicking the appropriate menu and reading text. It's also possible to use built-in hypertext links that allow you to jump to a variety of other OSHA-related services and sites, including the Office of Information and Consumer Affairs, the agency's Draft Ergonomics Proposal, and an extensive list of publications and booklets on a wide range of safety- and health-related topics. Other links can lead a user into scores of government data bases,

including FedWorld, which serves as a repository for a seemingly endless supply of federal-government statistics, data and information.

Government sites aren't the only place to find useful information, either. Many independent companies--including consulting firms--post reports and surveys. And articles from business publications offer information on a wide range of HR topics. The Internet's electronic newsstand includes American Demographics, Executive Female, Sloan Management Review, Inc. magazine, and dozens of other publications. CompuServe features Forbes and Industry Week. And America Online offers Business Week, Time, San Jose Mercury News, ABC News and many others. Frequently, it's possible to search back issues by keyword for specific topics.

Archival data bases, such as CompuServe's Magazine Database Plus and Business Database Plus, also can provide articles--particularly on mainstream topics such as benchmarking, pay for performance, TQM, business-process reengineering and an array of other topics. Using key words to search a topic, it's possible to download stories and print them on an "as needed" basis--almost always for a fee. More sophisticated services such as Nexis Lexis and Dialog offer even more advanced--and expensive--capabilities. Says Gibson: "The problem isn't finding information, it's sorting through everything to find the right information."

In fact, experts say that a few minefields await lackadaisical cybersurfers. One of the biggest problems, argues SHRM's Frost, is that the Information Superhighway can easily become the Misinformation Superhighway. "Just because you find something online doesn't mean that it's current or accurate. There's a lot of garbage masquerading behind fancy graphics and interesting hypertext links. Unfortunately, information has a certain legitimacy when you see it online. But that doesn't mean that it has been researched or that it's being presented by a legitimate authority."

That's the hype factor. Although the breadth of online resources is remarkable, depth is sometimes lacking. Differentiating between a five-star site and a one-star site requires patience and critical analysis. Yet it isn't the only concern. It's also important to pay attention to copyright laws and take care when reposting information online. The ease with which data can be copied makes it ripe for copyright abuse. And, finally, there are plenty of challenges in simply learning to navigate the Net. The sheer size of the online world is daunting, and there is etiquette--more often referred to as "netiquette"--you must adhere to. Users who fail to follow accepted procedures invite the wrath of others--known on the Internet as "flaming." "It's a little bit like learning to ski," says AMD's Johnston. "It is frustrating at first, but if you stick with it you will learn how to do it and it will become fulfilling. There is a ton of information out there, and the tools for obtaining the information are getting better all the time."

Online ability is changing the HR profession. HR professionals who venture online say that they can't imagine doing things any other way. With AMD's recruiting moving heavily online, Johnston can focus on ways to do his job more effectively. By broadcasting information to university job-placement offices and key professors, he's able to reduce the time it takes to fill a position and zero in on top candidates more effectively. "I'm spending far more time using E-mail than the telephone. Although there are occasions when the phone is useful, E-mail is faster and more efficient," he states.

And that's just the beginning. With the company's Web site, he doesn't have to worry about constantly updating brochures--an expensive and time-consuming task. "You create a four-color brochure, and it's out of date as soon as it's printed," Johnston says. "Online, we can change data or a graphic overnight at minimal cost." Similarly, he isn't burdened with trying to ship endless boxes of materials to job fairs. He simply directs potential recruits to go online and check out AMD's Web site--which

includes video clips, sound bytes, full-color graphics and text. In fact, it's possible to learn about AMD's Austin, Texas, facility, and then use a hypertext link to jump into the city's site, which discusses housing, education and recreational opportunities.

Lotus' Leonardo is convinced that the online world represents the future of HR. Soon, applicants will be able to directly access the company's homepage on the Web and find job openings and career opportunities. By clicking appropriate buttons, individuals will be able to receive further information and fill out online forms. They will be able to apply directly, without using E-mail, snail mail or faxes. And, today, when Leonardo needs detailed information on the industry and current trends, she uses the Internet and other online services to access newsletters, magazines and even newspapers such as The Wall Street Journal. Says Leonardo: "Going online doesn't eliminate human interaction, it simply makes it more efficient."

Which is precisely the idea. "This is completely revolutionizing the workplace," says Steve Scott, manager of technical recruiting at Staples. "It's creating possibilities that couldn't have been imagined just a few years ago." Concludes Gibson: "The human resources field has lagged a bit as far as getting online, but it now has an opportunity to catch up and take advantage of the tremendous capabilities. It's an extremely powerful tool that fits perfectly into the philosophy of eliminating inefficiencies and becoming a strategic partner. Like it or not, it's here to stay." So grab your mouse and hit the surf-cyberspace awaits you.

Samuel Greengard is a contributing editor to PERSONNEL JOURNAL.

To receive a list of online resources useful in the HR field, and instructions for accessing them, complete the Business Center Card included in this issue and completely darken box number 140.
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ABSTRACT: It is not too often that the labor market undergoes a fundamental
shift. Usually it takes something pretty big, along the lines of an
industrial revolution or a baby boom. But if the new face of job hunting is
a Web interface, as it appears to be, that is big. It is not hard to image
a future in which employers electronically screen candidates' soft
attributes, direct potential hires to a special Website for skills testing,
conduct background checks over the Net, interview candidates via a
videolink, and manage it all with Web-based software. It is not hard to
imagine, because all those services currently exist, or will very soon.
Headhunters are scared. Employers, meanwhile, are beguiled by the low cost,
high speed, and wide reach of hiring online. Online recruiting threatens to
accelerate this decade's key job trends: compulsive job hopping, flexible
hiring, and the evolution of an increasingly efficient labor market.

TEXT: Headnote:

The new way to look for a job is also the new way for companies like Cisco,
Marriott, Motorola, and Prudential to recruit top managers. Welcome to the
people mart of the future. (Are you ready for human auctions?) by Jerry
Useem

Zalee Harris' husband was sure she had lost it. Here it was, just before
Christmas, and she'd been laid off from her six-figure job at the telecom
company in Tysons Corner, Va., where she'd worked for seven years. Now she
was refusing to use the outplacement service or even to touch the Help
Wanted section. Instead, Zalee was insisting, "The Internet is going to
find me a job while I'm sleeping."

"Oh, my God," Joseph Harris told her, "we're going to be bankrupt by
March."

Not quite. Zalee, 42, built her own home page on the Web, with photograph,
resume, and statement of purpose. She registered the address in search
engines like Yahoo and WebCrawler. She bought contact-management software
to keep track of employment leads. She posted her resume on some 30
Internet job boards.

Boom! In just over a month, she received more than 50 inquiries from
headhunters and employers. On Jan. 18, just a day after a headhunter
spotted her resume on the CareerMosaic Website, Cable & Wireless offered
her a job as a senior project manager -comparable to her old one, only this
time her responsibilities would span 47 countries. "She knew what she was
doing," Joseph says in retrospect, "and I didn't."

It isn't too often that the labor market undergoes a fundamental shift.
Usually it takes something pretty big, along the lines cf an industrial
revolution or a baby boom. But if the new face of job hunting is a Web
interface, as it appears to be, that's big. "Digital resumes, digital
employment advertising, digital resume searches-it's a rebuilding of the
infrastructure, " says Intel Chairman Andy Grove. "It's almost following

e-mail in its growth."

Putting the online job market in a league with e-mail is a heady comparison. But consider: In January 1998, 17% of FORTUNE Global 500 companies were actively recruiting on the Net, according to research firm iLogos.com in Ottawa. Just a year later, that figure was 45%. Forrester Research in Cambridge, Mass., projects that employer spending on online recruiting will mushroom from $105 million last year to $1.7 billion in 2003-roughly triple the projections Forrester made in 1997. Already an estimated 2.5 million resumes are online, and a thriving economy of at least 28,500 job boards, such as Monster.com, HotJobs.com, and CareerMosaic (which has a partnership with fortune.com), bring employers and candidates together.

True, the Internet accounts for only about 2% of employment advertising, and the revenue stream that newspapers draw from classifieds has hardly been slowed by the rise of Internet job boards. And true, the Net in its current incarnation affects only the first step-alerting employer and candidate to each other's presence-of a multistep hiring process that depends on human contact. After connecting electronically with the headhunter, Zalee Harris still needed to put on a suit and present her corporeal self to Cable & Wireless for interviews.

But extrapolate a bit, and it's not hard to imagine a future in which employers electronically screen for candidates' "soft" attributes, direct potential hires to a special Website for skills testing, conduct background checks over the Net, interview candidates via a videolink, and manage it all with Web-based software. It's not hard to imagine, because all those services currently exist, or will very soon (FutureStep for screening, Qwiztek.com for testing, PeopleWise for background checks, SearchLINC for video, and any number of packages for the back end). When those services are bundled, as they undoubtedly will be, we'll have much more than the electrification of newspaper classifieds.

Fine, you say, but who besides techies and the uncommonly geeky would consider pounding the pavement virtually? Well, according to a poll conducted by Weddle's, a newsletter and Website about e-recruitment, fully 65% of online jobseekers hail from nontechnical professions. Among them: Bobby Beck, a 37year-old truck driver who wanted a job that would get him home to North Texas more than a couple of days a month. He logged on to Layover.com, where truckers can apply for multiple jobs by filling out a single application, and snared a job at U.S. Express for "beaucoup dollars," he says.

Or take Pastor Paul Dionne. In Waldo, Ohio, dreaming of his native New Hampshire, Dionne fired up a Yahoo search one night and discovered the home page of Atkinson Congregational Church, a 227-yearold parish in Atkinson, N.H. (pop. 6,000).

When he saw that the site was an electronic help-wanted brochure for a new pastor, Dionne recalls, "something inside me jumped." His wife took a look at the onscreen job description, and yelped, "Oh, my gosh, that's you!" Soon enough, Dionne's old Ohio church was putting up its own Website to find a replacement.

But surely, you still protest, corporate managers will not find their jobs this way. And to the extent that General Motors will not find its next CEO through Jobsjobsjobs.com, you're right. But you're mostly wrong. Motorola has recently advertised more than 30 director-level-and-above openings on the Net, including one senior brand-marketing position that carries a compensation package well over the halfmillion-dollar mark, according to Motorola recruiter Jim Pappas. Citibank, Hasbro, Lucent, Marriott International, Prudential, Sony, and Universal Studios, too, are advertising VP-level positions on the Web.

They are finding people like David Diamond. The MIT MBA had recently resigned as CEO of MicroE Defense & Aerospace, a high-tech startup in Natick, Mass., after it merged into its parent company. Normally, he says, the route to his next gig would have been through an executive-search firm. But he liked the idea of controlling his search and of "opening up the filters" to consider opportunities he normally wouldn't. He posted his resume on the site that's now Monster.com and began scanning job listings there. "I wasn't sure it was the right approach, because I thought most of the positions would be junior or highly technical," says Diamond, 38. Many were, but there was also a position at GTE for general manager of emerging business operations. Diamond e-mailed his resume to GTE, the company invited him in for interviews, and now, ten months into the new job, Diamond is second in charge of technology integration for the GTE-Bell Atlantic merger.

Few corners of the job market seem exempt. At Babson College's Olin Graduate School of Business in Wellesley, Mass., where students regularly use laptops in class, Jennifer Clark says she sees classmates surfing job sites during lectures. In Overland Park, Kan., Larry Sisel, 47, used Exec-U-Net to land his low-six-figure job as VP of finance at Laidlaw Transit Services. In Silicon Valley, software company MicroSystem Designs hired its CEO, Rick Garian, through Netshare.com.

Headhunters are scared. Online recruiting "is ready to just step on the executive-search industry," says Jeff Christian of search firm Christian & Timbers in Cleveland. "Personally, I don't want to be stomped on." That's why his company started its own Internet service, People Scape.

(Photograph Omitted)
Captioned as: CISCO'S HR CHIEF Barbara Beck, says recruiting on the Net has trimmed the time it takes to fill a job from 113 days to 45 days.

Employers, meanwhile, are beguiled by the low cost, high speed, and wide reach of hiring online. One human resources pro speaks of "my previous HR life, before the Internet." Bruce Hatz, a corporate staffing manager at Hewlett-Packard, is even more direct: "It's dramatically more effective than any medium ever known.

The Web is the future of recruiting." If he's right, some profound changes are in the offing. Besides shifting huge sums of money within the $17-billion-a-year recruiting industry (Forrester has declared, "The Internet will eliminate classifieds as we know them"), online recruiting will touch the lives of the millions of people who change jobs each year, as well as anyone who has ever considered doing sonamely, you.

In the process, it threatens to accelerate, perhaps into hyperdrive, this decade's key job trends: compulsive job hopping, flexible hiring, and the evolution of an increasingly efficient labor market. By disseminating compensation information, it may strip companies of their sovereignty in setting salaries. The Internet threatens, in short, to erupt into a true talent exchange-a full-blown electronic marketplace of people where this lovely business writer can be YOURS for the low, low price of ... well, read on before naming your offer.

It has even come to this: human auctions. On July 4, Monster.com is scheduled to launch its Monster Talent Market, where job seekers can sell themselves to the highest bidderturning the labor market, quite literally, into a labor market.

Hello. Welcome to the people mart.

Deep in the bowels of New York City's Science, Industry, and Business Library, more than a dozen corporate recruiters sit transfixed before computer screens. They've been sent here by the likes of Gerber Scientific, Goldman Sachs, and the New York Times to learn the emergent art known as

e-cruiting.

This morning instructor Mark Mehler is teaching them how to "flip" a Website. It's a technique (perfectly legal) that lets users reach Web pages that aren't accessible through a company's home page. Mehler taps in a few keystrokes and, presto, pulls up the employee directory of a well-known telecommunications concern. Employee bios, photos, and contact information are all there. A recruiter's dream. The students giggle in astonishment. (This is a trick you can try at home. Simply log on to hotbot.com, click on "more search options," and search by a combination of a company's domain name-say, apple.com-and the word "resume." Often the result is links to employee home pages, staff directories, and sometimes organization charts. Flipping has become so popular that there's a service, www. flipsearch.com, to do it for you, for a fee.)

The ease with which Mehler turns this neat trick underscores how oblivious many employers are to the threat of enemy recruiters online. "Their IT people get sloppy. They don't think like recruiters," explains Mehler, co-author with Gerry Crispin of the book CareerXroads. More important, his little demonstration is a sign of just how bareknuckled the fight for people has become. In the past five years employers have more than doubled their spending on executive recruiters, from $3.5 billion in 1993 to a projected $7.9 billion this year, according to Kennedy Information in Fitzwilliam, N.H. Some employers now ask headhunters to extend the "guarantee" periods during which they must redo a search if a placed candidate leaves. And UPS has taken to sending recruiters to Metallica concerts.

(Table Omitted)
Captioned as: Top Ten Online Job Sites

In their desperation, employers aren't content merely to post openings on job boards and wait for resumes to roll in. Instead they venture forth and stalk. "You have to think in competitive intelligence terms," counsels Michael Foster, CEO of AIRS, a training and software company in Hanover, N.H., that teaches onlinerecruiting tactics. "As people interact with each other online, they leave traces that recruiters can find." Some e-cruiters lurk on Internet newsgroups, where workers gather to discuss everything from database administration to dating. They watch to see who says the smartest stuff, then make their approach by e-mail. Others use the Net to track workers around the globe. Hewlett-Packard has built technology to process resumes written in many languages-soon to include Asian characters-and deposit them in a centralized database, searchable by any HewlettPackard manager. At last count, it contained about 150,000 resumes.

The Website of Inacom, a 12,000employee computer-services firm in Omaha, features a game called the TechnoChallenge, which combines flashy graphics with a series of technical questions. To play, contestants must enter their name, profession, and contact information-ostensibly to qualify for a drawing for a $1,500 prize if they score 100,000 points or more. What most don't know is that they're also being screened for potential employment at Inacom. "Anyone who scores 90% and above, we go after," says VP of technical recruiting Eva Fujan.

More aggressive than any online employer is Cisco Systems. The $10-billion-ayear networking company hires 66% of its people and receives 81%of its resumes via the Net. Its Website is a Venus flytrap of attractions. Visitors can fill a shopping cart with job openings that interest them or join the Make Friends @ Cisco program, which connects them with a real-life person from the department in which they want to work. If they don't have a resume handy, Cisco's Profiler is a simple, humorous interface that will help them build one. And because roughly 90% of "suspects" (as the IT team calls early-stage job prospects) log in from their current employer, there's an Oh No! My Boss Is Coming button, which quickly fills the screen with "Seven Habits of a Successful Employee." (No.

2 is "Embrace change.") Soon there will be a "virtual tour" of Cisco's San Jose campus. The whole kit gets prominent play on the company's home page, thereby ensnaring curious passersby.

"Cisco has turned this into a machine," says John Sullivan, director of human resource studies at San Francisco State University. Barbara Beck, Cisco's longtime chief of HR, diligently measures the machine's output. Her studies, for instance, indicate that Cisco's cost per hire is $6,556, vs. an industry average of $10,800. Its in-house staff of recruiters has remained steady at around 100 even as the company's annual rate of hiring has risen from 2,000 to 8,000 people.

But the most important statistic, says Beck, is 45 days: the average time it takes Cisco to fill an open job-down from 113 days three years ago. (A study by iLogos.com indicates that, on average, using the Net shaves 20 days off a company's hiring cycle.) For Cisco, whose current job openings fill a 463-page book, that's precious time.

How avidly does Cisco pursue candidates online? It has software that tracks where visitors to its Website go after leaving. It then places employment banner ads on those sites. Cisco's banners incorporate a domain-name reader, so that they appear only on the browsers of people who might be interested in working at Cisco-say, engineers at high-tech powerhouses like 3Com, Lucent, and Nortel. Of course, Cisco also subscribes to a number of job boards. In the world of e-cruiting, that's where the real action is.

Ground zero of this world is, oddly enough, the former epicenter of the minicomputer revolution: 5 Clocktower Place in Maynard, Mass., where Digital Equipment Corp. once made its home. Inside, amid purple carpets and lime-green chairs, you'll find an 11-foot statue of an ungainly and snaggletoothed beast named Trumpasaurus. And nearby you'll also find the closest thing this nascent industry has to an iconic figure.

That figure is Jeff Taylor, a contentious and goateed 38-year-old who in summer 1994 perplexed staffers at his Boston-area ad agency by launching an Internet site he called the Monster Board. The idea was straightforward: Job candidates who logged on could (1) post their resume for viewing by employers, and (2) search a database of job openings, all free. Employers, for their part, paid for access to the resumes and for the right to post job openings. Taylor was zealously plugging the Monster Board's Web address-the 454th dot.com site, he proudly notes-in radio spots before anyone really knew what the Web was.

(Photograph Omitted)

Captioned as: HARRIS' HUSBAND thought she'd never find a managerial job online. It took her a month.

Truncated in January to Monster.com (the name stands out in a field loaded with "Careers" this and "Jobs" that), Taylor's creation has become a byword for the entire find-a-job-on-the-Net phenomenon, with a memorably ironic TV campaign ("When I grow up," says one kid, "I want to file all day"), 380 employees, a database of 226,000 job openings and 1.5 million resumes, and projected 1999 revenues of $90 million-perhaps a third of all employer spending on online-recruitment advertising. Monster.com is even making money: $400,000 in the first quarter of 1999. Salomon Smith Barney analyst Lanny Baker has noted that with its 161% year-on-year growth rate, the company bears an "uncanny" resemblance to Yahoo 15 months ago, and would probably be worth at least $2 billion now. All of which would make Taylor one extremely well-fixed guy-except that he got a bit too far ahead of the curve and sold out in 1995 (to recruitment ad agency TMP WorldWide), well before Netmania started hurling billions at unsuspecting entrepreneurs. But that's another story.

Once Taylor has passed the obligatory moment of pained reflection (he does

note that the TMP deal was "not a one-comma sale"), he launches into a
hyperkinetic oration about how Monster.com will supposedly reinvent job
hunting as we know it. "For 100 years we've had the 'job announcement'
strategy," he says, Magic Marker flying as he whiteboards his ideas.
"Whether it's nailed to a tree in the center of town, or in the help-wanted
section of the newspaper, it's a matter of hiring whoever happens to be
actively looking at the moment."

In its place, Taylor submits, will be a world in which employers build
long-term electronic relationships with candidates years before they
actually need them (dubbed just-in-time-recruiting, or JITR, by industry
analyst John Sumser of Interbiznet.com in Mill Valley, Calif.) and in which
employees keep their credentials in play more or less constantly via a sort
of personal online-marketing module. They become active yet passive
lookers, perhaps content with their station in life but always on the watch
for that dream job. "I think there's going to be 20, 30, 40 million resumes
in [databases] in the U.S.," says Taylor, who begins to describe his plan
for a desktop "career operating system, not unlike Intuit," that will
manage people's ongoing chore of making sure they are optimally employed.

While the future that Taylor sketches does seem plausible, many observers
question whether Monster.com -or any big job boards, for that matterwill
have a place in it. After all, doesn't their very bigness make them less
valuable to employers, burying job postings among thousands of others? And
what's the point of coast-to-coast geographic scope when most job seekers
still want something close to home?

Those are good questions, because the past few months have witnessed an
explosion of niche sites that could splinter the online job market as fast
as people like Taylor unified it. Job seekers can now check out
overseasjobs.com, christian jobs.com, cplusplusjobs.com, bilingualjobs.com,
coloradojobs.com, 6figure jobs.com, spacejobs.com, and getarealjob. com
(not to mention just plain jobs.com). There are sites for casino workers
(casinocareers.com), black engineers (nsbe.org), models (modelsource.com),
finance types (jobsinthemoney.com), project managers (projectmanager.com),
MBAs (MBAfreeagents.com), Asianlanguage speakers (asia-net.com), morticians
(funeralnet.com), and feminists (feminist.org/911/911jobs.html). It's all
infinitely segmentable. There's even a site called WeedJobs, for people who
study soil and weeds (nrcan.gc.ca/-bcampbel).

A job board for every purse and purpose? Taylor counters such talk with a
buffet of arguments, including the "surprise factor," which, he claims, is
half the fun of a job search. "If you get too narrow a niche," he says,
"you completely lose any surprise." But mostly-here's where the "Monster"
part comes in-Taylor predicts his "tank" will get so big that it will
contain more resumes of, say, lefthanded dentists than any
leftydentists.com site could possibly accumulate. Then Monster can slice
and dice its own "verticals," including the ultimate vertical: a
personalized job "agent" that takes your specs, then periodically delivers
openings of your liking via e-mail.

Another radical business idea Taylor embraces is the human auction-in which
workers sell themselves to the highest bidder.
The concept has met with equal parts enthusiasm and derision. Enthusiasm,
because it looks like the consummation of what pundits have long predicted
our labor market would become: a frictionless clearing-house in which
employers enlist freeagent workers on an as-needed basis, Hollywood-style.
"The information we'll conceivably learn from [online job auctions] will be
huge," says Jeffrey Bradach, a Harvard Business School professor who
studies new employment relationships. "All the speculation about the value
of different skill sets? Well, now we'll know."

(Photograph Omitted)

Captioned as: MONSTER.COM CEO Taylor is the godfather of online recruiting.

His job board has the most resumes.

(Table Omitted)

Captioned as: Line Job Hunting by the Numbers

Derision, because the whole concept strikes some as farfetched-despite the fact that a team of 16 software types already tried to auction themselves off on eBay for $3.1 million. Taylor's idea is for workers to profile their skills, name an opening price, then put themselves on the block for one, three, or five days (though they're under no obligation to accept any offer). One wonders: How many people have the stomach to stick a fat price tag on themselves, only to find they're worth less than the blue book value of their '92 Corolla? Probably not anyone who's ever been picked last for teams in gym class. And are employers ready to become that unsentimental about employee relations? Not Reggie Barefield, executive director of talent resources at healthcare giant Humana. "This slave-auction concept," he says, "that's going a little too far back."

Or too far forward. The proliferation of such market makers will almost certainly result in a labor market that is more fluid than ever, perhaps even coming to resemble in some ways a Chicago Mercantile Exchange for people.

But clearly the commodities market analogy has limits. Soybeans don't insist on working in the Bay Area only. A barrel of petroleum doesn't need to be cajoled from its current position. Pork bellies needn't be closely inspected to make sure they can get along with the other pork bellies.

Which is to say that any marketplace where the goods are sentient beings has friction that other markets don't. You can be sure, too, that companies will do everything in their power to increase that friction, erecting new barriers to employee movement. Vesting periods for stock options, for instance, are getting longer. "Retention" has become the HR buzzword du jour. Other times the handcuffs are not so golden: More than a few companies have quietly hired full-time "salvagers" to patrol Internet job boards for their own employees' resumes.

A frictionless marketplace also requires truth in labeling, and resumes are notoriously untruthful. Garry Mathiason, a labor lawyer at Littler Mendelson in San Francisco, says he represents a corporation that used the Internet to procure the resumes of several software developers from Iowa. Only problem was, they weren't from Iowa. After the company hired the programmers (virtually, of course) to complete a project, Mathiason says, it discovered that the resumes were actually fronts for as many as 30 programmers working in India. Which brings us back to our earlier point: Nothing in all this Net stuff eliminates the need for human contact. Face-to-face conversations will likely determine the ultimate fate of job seekers for decades to come.

(Photograph Omitted)

Captioned as: PAUL DIONNE found his job as pastor for a church in Atkinson, N.H. (pop. 6,000), on the Web.
But set aside such concerns for a moment and assume that the Net will make hiring and job seeking, at the very least, more market-like. What happens then? A few guesses:

1. Despite companies' best efforts at retention, job hopping accelerates. A recent flurry of studies has shown that job tenure is on the wane, albeit for reasons having little to do with the Internet. (According to U.S. Census Bureau data, men ages 45 to 54 had been on their jobs an average of 9.4 years in 1998, compared with 12.8 years for that age group in 1983.) Now, notes Wharton School professor Peter Cappelli, "having all these options out there is probably going to make people less happy with what

they've got."

2. Companies no longer rely solely on compensation experts to figure out what to pay employees-for the same reason that publicly traded companies don't hire valuation experts to figure out how much their stock is worth. The "price" of an employee may become more objective, specific, and market-driven.

3. Pay disparities widen. As the forces of supply and demand make themselves felt more quickly through the ether-and workplace Michael Jordans play to a global audience of potential "bidders"-top performers will command Jordanesque dollars. "The value differential between top and average talent is enormous, close to 100 to one," says Bob Proctor of McKinsey & Co., who is working on the followup to the firm's oft-cited report "The War for Talent."

Magnified, these disparities could play havoc with companies' pay structures. It's not just that the annual compensation review is too slow to keep pace with the electronic marketplace. It's that a cybermart approach violates many of the shibboleths by which organizations dole out rewardslongevity, a sense of internal equity, an employee's rank in the hierarchy. Suddenly a 24-year-old with ultrahot skills is "worth" three times more than the senior manager three rungs above him. But to resist such pricing, argues Harvard Business School's Jeffrey Bradach, will be to invite swift punishment in the form of employee defections. "The market will intrude on internal labor markets in ways that it never has in the past," he predicts.

Of course, a few things are missing from this vision. Training, for instance. The fact is, most people who have skills to sell on the open marketplace acquired them through conventional, open-ended relationships with employers. By treating workers as fixed constellations of skills-as opposed to dynamic beings who can be taught things-an electronic mart might allocate people with wonderful efficiency in the short term but underinvest in them over the long haul. "It's not obvious to me how you grow up in a pure auction-based model," says Bradach. "Somebody still needs to invest in you."

Then there's this slightly scary question:

What happens when the present economic boom ends, the labor market slackens, and employers curtail spending on electronic recruiting? Does the whole phenomenon evaporate?

Not likely. If the supply begins to seriously outstrip the demand, job seekers might be coaxed into picking up some of the tab, paying to search job openings or post their resumes. And remember that the labor shortage isn't entirely a function of the business cycle; as the McKinsey study notes, the next IS years will witness a IS% decline in the number of people ages 35 to 44. "That's not going to go away when the economy slows down," notes Helen Handfield-Jones, one of the McKinsey authors.

One thing's for sure: Employees who learn online tactics now will be well prepared whatever happens. Zalee Harris, for one, still has her personal Web page (http:// members.aol.com/ ht_a/zaleharris/ZOPS. html). "Just in case something happens," she laughs, "I'm up and running."

Sidebar:

Get Your Resume Ready for the Web

In the century or so since it first appeared, the basic resume hasn't changed a whole lot. A c.v. from 1922 that's in the offices of Monster.com could almost pass as contemporary-if the applicant hadn't noted his marital status, height, weight, and the fact that he enjoyed a good fox hunt now

and then.

Thanks to the Net, the cardinal career document is finally getting a makeover. Verbs, once paramount (you drove that inventory initiative, didn't you?), are out. Nouns are in. On the Net, see, keywords are king (they're what pop up when an employer searches a database), and keywords tend to be nounsskills, software programs, what have you. Some applicants even create a Keyword section, right up there with Experience and Education.

Chronology is out. KSA is in. That stands for "knowledge, skills, and abilities." With many industries hurtling toward some unspecified new order, where you've been counts less than what acronyms you've mastered, as Zalee Harris can attest. Abruptly laid off from her job in telecom, she put what she calls a "1980s-style" resume on her home page and got zero response. "It was a critical situation," Harris says. "Time was running out."

Then she wised up and put hot-button terms like "LAN," "WAN," and "program management" up high. "In three days," she reports, "I had more calls than I could literally handle. It was an awakening."

Formatting is way out of fashion. Swear off the fancy italics and boldface. Databases can't understand such frippery, and scanning machines scramble it, turning "cum laude" (as happened to a friend of this writer) into "corn dude."

Coming soon: video resumes. The Dallas company SearchLINC says it is in talks with several job boards to facilitate short video attachments to online resumes. Smile for your future employer and say that you enjoy long talks in your cubicle.

Author Affiliation:
DAVID DIAMOND, general manager for technology planning at GTE, found the telco's job posting online at Monster.com.

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**Job-shopping Web-style: Web sites match companies and job seekers in ways
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(Internet/Web/Online Service Information)**
Parkes, Clara H.
DBMS, v10, n1, pS37(3)
Jan, 1997
ISSN: 1041-5173   LANGUAGE: English   RECORD TYPE: Fulltext; Abstract
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ABSTRACT: The Web is making job-hunting easier. Helpful sites include
IntelliMatch, which includes Power Resume to list a job candidate's
qualifications, as well as Candidate Finder to facilitate recruiting.
Virtual Resource's CareerSite provides SmartMatch, a feature matching
specified position requirements to statements in a job hunter's resume. The
Virtual Agent feature alerts users to openings that match their skills. The
hotjobs site of OTEC's Online Technology Employment Center allows users to
hunt for employment opportunities with keywords or view a complete listing
of positions. Users can also post and modify an online resume, look for a
potential employee, or obtain data on member organizations.
TEXT:
      WEB SITES MATCH COMPANIES AND JOB SEEKERS IN WAYS PREVIOUSLY
IMPOSSIBLE.
      The Internet is a remarkable leveling tool that brings together
people who might otherwise never interact. It works perfectly in the
employment arena, allowing job seekers and employers to network in ways
that were previously impossible. In just a short period of time,
job-related sites have popped up all over the Net. Some simply provide job
listings; others let job hunters create and store an online resume that
employers can browse at their will. These sites will also notify you when a
job of your specifications has been posted.
      In this issue I look at three employment-related sites and explore
how people are using client/server, Internet/Intranet technology to recruit
and obtain employment. I show how each database-driven Web site has solved
the puzzle of providing large-scale information retrieval, storage, and
delivery over the Internet, from initial development to the site you can
call up on your Web browser today.
      Early Beginnings
      The first employment sites offered basic lists of job openings,
usually in highly specific technical areas. If you were lucky, you could
search by subject or geography. Otherwise, you had to use the Find function
on your Web browser and hope that your keyword matched that of the job
posting. Most sites were offered by large organizations as a free service,
and there was little concern about making the job site itself a commercial
proposition.
      As more people discovered the value of the Internet for finding jobs,
the issues became much more complex. Job sites not only had to maintain
large databases of information, but they had to grapple with competitive
demands and start generating revenues. This meant drawing more employers
and employees to the site, making information as appealing and easy to
navigate as possible, and offering more ways to search and personalize
their services.
      Some companies had a head start in that they already offered
client/server versions of their employment products and merely had to port
them to the Web. One such site is IntelliMatch Inc.'s IntelliMatch (San
Jose, Calif., www.intellimatch.com). The company already had a
client/server model of its service built on Oracle with PowerBuilder as its
front end, which it sold to large companies.
      Precision Matches

Founded in 1994 and privately held with venture funding and an investment from Knight-Ridder Inc., IntelliMatch provides services to over 100 high-tech and corporate customers. The site offers Power Resume, an online resume builder that creates a detailed electronic profile of the job seeker; Job Finder, which lets you browse and respond to employer ads; Candidate Finder, which helps employers identify appropriate candidates for open positions; and Online Ad Builder, which helps employers create a recruitment ad. IntelliMatch recently added IntraViewer to its product list. It is an internal skills management tool designed to function within a corporate Intranet. Each employee must complete a Power Resume. Managers can then query the database to pinpoint specific employees for special projects or new opportunities.

Four machines maintain the IntelliMatch Web site. Two Sun Enterprise 5000 database servers run Oracle7, the Oracle Web Agent, and Netscape Commerce Server. The site also has two Sun SPARC 20 servers dedicated to the resumes and connected straight into the databases that hold the files of employers and seekers; the servers also run Netscape Commerce Server. At any given time it holds approximately 50,000 resumes.

Between 10 and 12 people were involved in developing the site at any given time. Because the company already offered a client/server model of the product that IntelliMatch is based on, it decided that Internet technology had advanced enough to support the product on the Web in mid-1995. The first Web application was up and running in January 1996, with free text search of resumes; in March of 1996, the company introduced the Precision Matching engine.

The development team used Oracle Designer/2000 for the architectural database design work. According to Director of Software Engineering Edwin Westlake, the team used Oracle because they inherited it from the earlier client/server application and they had licenses for it. Now that the site and application development environment are open on the Web, Westlake hopes to expand the hardware and database platform support.

The team uses Microsoft FrontPage to prototype the HTML pages before putting them on the site. HTML is dynamically generated via PL-SQL calls to the Oracle Web Agent. Although the site is currently monitored by Oracle's own too)s, Westlake is evaluating monitoring tools from Platinum and may switch over sometime next year.

The main differentiator for IntelliMatch is its Precision Matching technology, which identifies specific candidate characteristics, matches them to job requirements, and determines whether a candidate is qualified. The technology is based on a structured format in which text resumes are broken down into component parts. It also relies on a common lexicon--standard names, degrees, qualifications, experience, and so on--which is stored in the database. Both employer and employee are using the same language to define job postings, resumes, and search criteria.

Employers use this lexicon when specifying what they are seeking in a candidate. After all the criteria have been entered, a dynamic SQL statement is generated that queries the database, and information is returned in the form of an Oracle table. This information is partitioned and appears to the employer as a list of job seekers sorted by how recently the resume has been up&ted.

The site receives between 200,000 and 220,000 hits daily, with approximately 10,000 unique user IDs per day. Many of these hits are the result of links from partner sites such as KnightRidder, InfoSeek, Jobs Across America, and Internet University. Westlake uses WebTrends from e.g. Software Inc. (Portland, Ore.) to measure activity and see how people are navigating the site. A new version is released every three weeks, taking turns between the employee side of the site and the employer side. Wes flake tries to introduce some type of site architecture change every three months.

On the Intranet side, the IntraViewer product went into beta last September. It lets employers capture and access all of the skills in their workforce, helping them put project teams together simply by entering a query. It gives managers a dynamic repository of their employees' skills and experience so that they can target specific people for specific projects or new positions. Meanwhile, employees can use IntraViewer to

promote themselves and their achievements and find out about advancement
opportunities within the company.

Employment by Concept

One of IntelliMatch's competitors in the Web arena is CareerSite from
Virtual Resources Corp. (Ann Arbor, Mich., www.careersite.com). CareerSite
is an interactive candidate sourcing and recruiting application for
employers and an interactive job search application for job seekers. It
offers searching, matching, sorting, delivery, messaging, and tracking
capabilities. What makes it unique is its vector-based proprietary search
engine, SmartMatch. Unlike keyword searching, SmartMatch interprets the
concepts used in the job description with the concepts in the candidate's
profile, and matches them, even if the individual uses different
terminology. CareerSite also offers a Virtual Agent service for candidates
whereby they are notified when opportunities that match their profile get
posted on the site, and it proactively searches for opportunities that fall
within job seekers' skill range.

SmartMatch is based on the notion that you can view terms in a
document as vectors in a high-dimensional space. Each dimension in the
vector represents how strongly a particular term is present in a given
document. Thus, in a typical domain of jobs or resumes, a document vector
might have 20,000 dimensions. Similarly, a query is also represented as a
vector in this space. To retrieve documents, you find document vectors that
are sufficiently close to the query vector. SmartMatch is capable of
searching and scoring 50,000 documents per second, regardless of the number
of terms used in the query.

CareerSite content is automatically coded by means of a knowledge
base of 40,000 employment concepts (similar in idea to IntelliMatch's
lexicon). Concepts are arranged hierarchically and support an unlimited
number of synonyms. Concepts consist of words or phrases up to 10 words
long that describe various aspects of employee recruitment and job search.
Through this common reference to the knowledge base, SmartMatch can find
appropriate content regardless of the words or phrases used in the query
request.

Work on the site began in February 1995, and it went live in August
of the same year. A six-member, full-time staff worked with several outside
consultants to develop the site, and the developers continue to add new
functionality and create new interfaces. Hosted on a dual-processor Silicon
Graphics Challenge DM server, the site runs a combination of Microsoft SQL
Server and proprietary content management software. Microsoft SQL Server
handles the job subscriber and service administration tasks, and SmartMatch
handles the content. The team developed the site in Perl, C, CVS, Apache
Web server (from Community ConneXion Inc., Berkeley, Calif.), and CGI.pm.
The Web server is linked to the database server via a Perl-based CGI
interface. The team plans to use the Microsoft SQL Server authentication
module for the Apache server in the future. Approximately 78 templates had
to be created with a C program preprocessor to serve up the HTML; however,
the team primarily uses Perl tools such as CGI.pm to build templates. The
HTML is served via a Perl-based CGI interface.

Aside from a few static pages on the site, the pages are dynamically
generated. One example of a dynamic page is job search query input, which
generates concept validation pages that let users decide on a variable
number of concepts to be used in the query. Responses to a job search query
are generated dynamically, as is the job-seeker desktop and the employer
virtual office desktop.

The staff members chose to develop their own database manager because
they thought that relational databases did not provide the performance,
accuracy, or flexibility they needed for data files and keyword retrieval.
At that time, they could not find a search engine that let them deliver
appropriate response times for document retrievals using a large number of
concepts in searching and matching operations, and none let them develop
domain-specific scoring. They are currently considering a switch to Oracle
and Sybase.

Looking in Detail

With average monthly visitors numbering 100,000 (with 2.25 million
hits), CareerSite is one of the largest job-related sites on the Web and

offers job listings in a variety of industries. However, the majority of the sites are still focused on computer or technology-related jobs. One such site is www.hotjobs.com, the Online Technology Employment Center from OTEC Inc., a New York City-based integration and consulting firm.

Hotjobs.com lets you search for jobs by keywords or browse a complete listing of jobs, enter or edit an online resume, search for a candidate, or access information on member companies. You can create and save an online resume that you can edit at any time, and you can arrange to have your resume automatically emailed in response to job openings you want to pursue.

The site took a mere four weeks of initial development by a team of two technical engineers and one graphic/layout and design engineer. Running on Oracle7 and developed with Netscape Commerce Server, the site was created in C using the GNU GCC compiler, version 7.2.2. All applications compile and run under SunOS 4.x, Solaris 2.x, and IRIS 6.2. The linking between the Web server and database servers is made with Netscape Commerce Server's CGI, which also generates the HTML.

Companies enter job information into HTML form fields through their browser; this data is passed to Netscape Commerce Server's CGI on the back end to verify the validity of the data presented. The data is then moved into appropriate tables within the database system's back end. Applicants submit their resumes online to specific jobs through a CGI interface that pulls the job information from the job database and sends the member company the applicant's resume, along with information about the job(s) to which he or she is applying.

The site also offers a service to member companies whereby they can gain on-the-fly, realtime statistics regarding how many times each of their jobs came up in an applicant's search, how many times an applicant looked at a particular job, and how many resumes they have received for a particular job. Also, user host information, browser type, and other information is stored for version statistics and tracking purposes. All of this information is available online through CGI-generated HTML forms to member companies.

Earle Ady, vice president of OTEC, was unable to give me specific usage numbers for the site, but he estimates that it receives some 50,000 hits per day, of which approximately 1000 are unique users. These numbers are slightly skewed by the fact that large sites such as AOL, which use proxy servers for their Web servers, count as "one site" because connections are originating from their proxy machine. To monitor the site, OTEC uses tracking facilities within all CGI applications on the back end. Netscape Commerce Server's logging facilities provide hit statistics.

Discerning Factors

An obvious conclusion, based on this review of three job sites, is that most employment sites offer the same kinds of information--resumes and job listings. The differentiating factors are the user-friendly navigational tools they provide and the unique features they offer the employer who pays to list with them. IntelliMatch developed Precision Matching technology, and CareerSite built its SmartMatch content management search engine. Both of these sites also promote the low cost of employee recruitment via their sites as opposed to traditional recruitment strategies. Serving a more targeted audience, Hotjobs.com offers no flashy search engines beyond keyword searching, but it does give member companies detailed, realtime statistics on how many applications they have received for a particular listing, and on who is accessing what listings and how frequently.

Each solution has its pros and cons, and each site is sure to undergo significant changes over the next six months--such is the nature of Web applications. The solutions these three sites have found are good representations of how companies are exploiting the "World Wide" nature of the Web and also the storage and searching capabilities of today's database and client/server technology. Along with the growth in this area comes innovation; more sophisticated sites are bound to evolve from the ones reviewed here. I'll keep you posted.

* CareerSite, www.careersite.com
* IntelliMatch, www.intellimatch.com

* Online Technology Employment Center, www.otec.com
    Clara H. Parkes is features editor of DBMS, where her extensive
perusal of job sites on the Internet to research this column raised many
eyebrows and worried management. You can email her at cparkes@mfi.com.
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